IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Title: DATA MODEL FOR SUPPLY CHAIN PLANNING

Application Serial No.:   09/033,840

Inventor: SOHNER ET AL.

Art unit: 2787

Examiner: CROCKETT, R.

To: Assistant Commissioner for Patents
      Washington, D.C. 20231

PRELIMINARY AMENDMENT

Further to the recent interview with Applicant's representative and the Examiner,

Applicant submits herewith new claims in method format. As the Examiner has

requested, Applicant is filing these claims together with a continuation application and a

preliminary amendment. It is believed that these claims are in condition for allowance,

which allowance is earnestly solicited:

In the Claims

Please cancel claims 1-20, and add the following new claims:

21. (New) A method for facilitating the dynamic allocation of manufacturing resources

and materials in a manufacturing sequence, comprising the steps of:

providing a data model for said manufacturing sequence,

said data model comprising one or more orders representing one or more

materials being consumed and/or created in said manufacturing sequence, said

orders being linked such that the order that consumes a material follows the order

that creates the respective material in said manufacturing sequence,

each of said orders comprising one or more activities representing materials being

processed by said manufacturing resources, said activities being linked

chronologically within each order, said link between activities further comprising

information about the temporal constraints between said activities.

Determining the start time for the first activity of said manufacturing sequence and using

said temporal constraints in said data model to calculate the start times for all of said

activities that are performed on a particular one of said manufacturing resources.

22. (New) The method of claim 21, wherein said data model further comprises

information about temporal constraints between said activities in different orders in said

manufacturing sequence.

23. (New) The method of claim 21, further comprising the steps of

Adjusting said start time for one or more of said activities in said manufacturing

sequence;

Using said data model to dynamically re-calculate said start times for one or more of said

activities on subsequent ones of said manufacturing resources.

24. (New) The method of claim 21, further comprising the steps of optimizing the use of

said manufacturing resources in real time by dynamically allocating certain of said

2

manufacturing resources to other uses based on the calculated availability of said

manufacturing resources in said manufacturing sequence.

25. (New) The method of claim 21, further comprising the steps of determining the

quantity of and time for said materials being supplied to each of said manufacturing

resources by providing the start time for the first of said activities of the first of said

orders, and calculating said start time for each of said orders that consumes said materials

using said information about temporal constraints between activities;

supplying the necessary quantity of said materials to each of said manufacturing

resources in said manufacturing sequence at said determined times based on said

determined time for and quantity of said materials for respective ones of said

manufacturing resources.

26. (New) The method of claim 25, further comprising the step of adjusting said start

time for one of said activities based on the unavailability of a particular one of said

manufacturing resources, and re-calculating the time at which materials need be supplied

to each of said manufacturing resources based on said adjusted start time.

27. (New) The method of claim 21, wherein said data model further comprises input

nodes representing materials consumed by an order and output nodes representing

materials created by an order.

28. (New) The method of claim 27, further comprising the step of determining the bill of

materials for an output material by identifying all of the input nodes corresponding to the

output node for said material.

3

29. (New) The method of claim 22, further comprising the step of determining all orders for a specific material and storing said orders in a database of order information.

30. (New) A method for monitoring the use of resources and materials in a manufacturing sequence, comprising the steps of:

providing a data model representing said manufacturing sequence,

said data model comprising one or more orders representing one or more materials being consumed and/or created in said manufacturing sequence, said orders being linked such that the order that consumes a material follows the order that creates the respective material in said manufacturing sequence, each of said orders comprising one or more activities representing materials being processed by manufacturing resources, said activities being linked chronologically within each order, said link between activities further comprising information about the temporal constraints between said activities, and temporal constraints between activities in different orders in said manufacturing sequence.

Determining based on the start time for the first order whether a specific resource is in use at any given time during said manufacturing sequence.

31. The method of claim 30, further comprising the step of determining the time and duration for all of said activities on a particular one of said manufacturing resources.

4

32. The method of claim 30, further comprising the step of chronologically storing in a database table all activities scheduled to take place in said manufacturing sequence, said storing performed using said information about temporal constraints between orders.

33. The method of claim 30, further comprising the step of determining the availability of one or more of said manufacturing resources for uses other than said manufacturing sequence by calculating said availability based on said information about temporal constraints between said orders for a given manufacturing supply chain.

34. The method of claim 30, further comprising the step of determining all of said orders for a particular one of said materials for the purposes of determining the quantity of said material that is needed for r4espective ones of said manufacturing resources.

Respectfully submitted,

By

Michael R. Graif
Reg. No. 47,298
Chadbourne & Parke LLP
30 Rockefeller Plaza
New York, New York 10112
(212) 408-5100